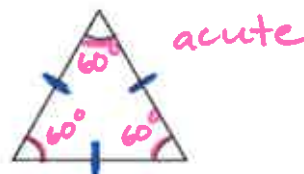


Triangles can be classified by their side lengths or by the size of the interior angles.

**Triangles classified by SIDE LENGTH**

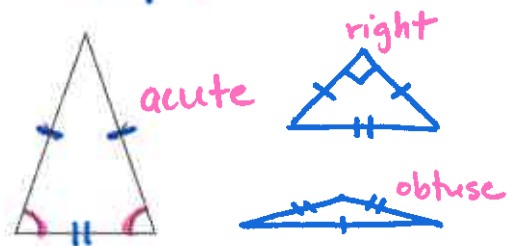
equilateral

- three sides are equal length
- three equal angles



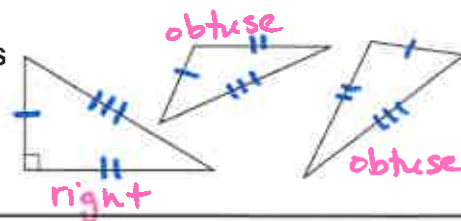
isosceles

- two sides of equal length
- two equal angles



scalene

- all sides are different lengths
- all angles are different



**Triangles classified by ANGLE SIZE**

acute

- all three angles are less than  $90^\circ$



right

- one angle is  $90^\circ$



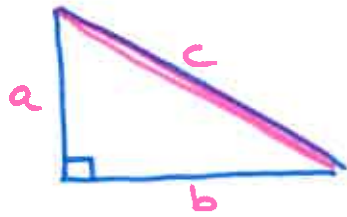
obtuse

- one angle is greater than  $90^\circ$



## What else do we know about triangles?

1. The sum of the angles in a triangle = 180 °
2. For any right triangle:



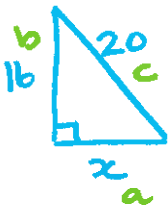
$$a^2 + b^2 = c^2$$

↑ hypotenuse

### Example

Use the diagram to answer the questions below.

- a) What is the length of side BC?



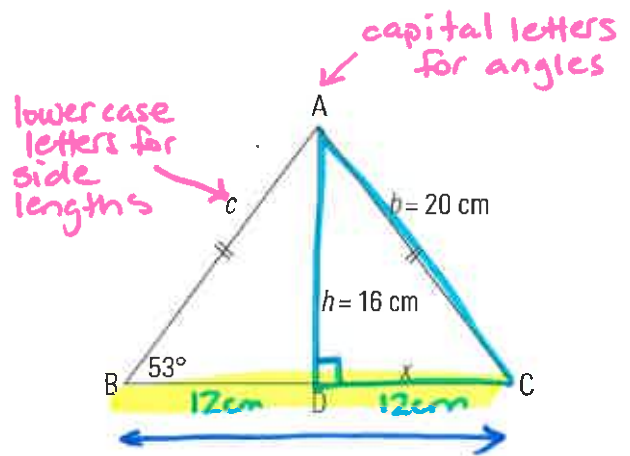
$$a^2 + b^2 = c^2$$

$$x^2 + 16^2 = 20^2$$

$$x^2 = 20^2 - 16^2$$

$$x = \sqrt{144}$$

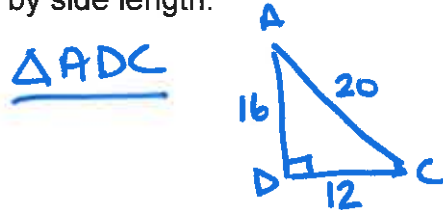
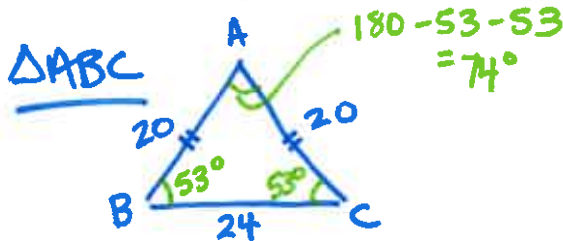
$$x = 12 \text{ cm}$$



$$BC = 12 + 12$$

$$= \boxed{24 \text{ cm}}$$

- b) Classify  $\triangle ABC$  and  $\triangle ADC$  by angle size and by side length.



- acute (all  $\angle$ s less than  $90^\circ$ )
- isosceles (two equal sides)

- right (has one  $90^\circ$  angle)
- scalene (all side lengths are different)